

5 UNCHARGED POLYMERS FOR SEPARATION OF BIOMOLECULES
 BY CAPILLARY ELECTROPHORESIS

10 Abstract of the Invention

 The invention provides uncharged water-soluble silica-adsorbing polymers for suppressing electroendosmotic flow and to reduce analyte-wall interactions in capillary electrophoresis. In one aspect of the invention, one or more of such polymers are
15 employed as components of a separation medium for the separation of biomolecules, such as polynucleotides, polysaccharides, proteins, and the like, by capillary electrophoresis. Generally, such polymers are characterized by (i) water solubility over the temperature range between about 20°C to about 50°C, (ii) concentration in a separation medium in the range between about 0.001% to about 10% (weight/volume),
20 (iii) molecular weight in the range of about 5×10^3 to about 1×10^6 daltons, and (iv) absence of charged groups in an aqueous medium having pH in the range of about 6 to about 9. In one embodiment, polymers of the invention are selected from the group consisting of polylactams, such as polyvinylpyrrolidone; N,N-disubstituted polyacrylamides; and N-substituted polyacrylamides. In accordance with the method of
25 the invention, a sufficient amount of polymer adsorbs to the capillary surface to establish a zone of high viscosity that shields the analyte from the wall and impedes the movement of an electrical double layer under an electric field.